



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,112	05/31/2006	Toshiaki Shimada	740819-1145	5364
78198 7590 06/18/2009				
Studebaker & Brackett PC 1890 Preston White Drive Suite 105 Reston, VA 20191				
EXAMINER				
KRAUSE, JUSTIN MITCHELL				
ART UNIT		PAPER NUMBER		
3656				
MAIL DATE		DELIVERY MODE		
06/18/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/581,112

Applicant(s)

SHIMADA, TOSHIAKI

Examiner

JUSTIN KRAUSE

Art Unit

3656

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/31/06.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-824)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date 5/23/07, 11/9/06, 8/26/06, 5/31/06

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 2 recite the limitation "the first arm component" in line 6, respectively. As the claims previously recite "a plurality of first arm components", it is unclear specifically which first arm component is being referenced.

The claims use the term "it" or "its" to reference elements. For clarity and proper antecedent basis, it is suggested that "it" be replaced with the element being recited.

Claim Rejections - 35 USC § 103

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barker (US Patent 5,060,532) in view of Nishizawa (US Patent 4,698,568).

Barker discloses an industrial robot comprising:

A robot arm including a plurality of first arm members (12,16) swingably connected to one another,

A base (14) to which one of the first arm components (12) at a base side end of the robot arm is connected,

wherein the first arm component is driven by a thrust of a rod (70),

each of the first arm components has a connector (18) which is detachably connected to a neighboring one of the first arm components,

the connector is connectable to a replacement second arm component (110) in place of the neighboring first arm component.

Barker does not disclose the rod having a thread groove in its outer surface, the rod being axially moved by rotating a nut meshed with the rod.

Nishizawa teaches an industrial robot with an arm component that is driven by a thrust of a rod (21) which has a thread groove in its outer surface to provide an inexpensive and easily shieldable drive structure for a robot arm.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Barker to include a thread groove in the outer surface of the rod which drives the first arm component for the purpose of providing a drive mechanism which is inexpensive and easily shieldable. Regarding the limitation that the rod is moved by rotating a nut meshed with the rod, while Nishizawa discloses the rod as the driven component, it is an obvious matter of reversal of parts to include the nut as the driven component and the rod as the driven component. *In re Gazda*, 219 F.2d 449, 104 USPQ 400 (CCPA 1955). Such an arrangement is disclosed, for example, by US Patent 5,394,288 to Nishida.

Regarding claim 2, the connector is connectable to an additional second arm component (110) added to the robot and included in the robot arm together with the first arm components.

Regarding claim 3, the length of the second arm component in its arm axis direction is different from the length of the first arm component in its arm axis direction (extendable via telescoping pin 138, the length is different).

Regarding claim 4, the second arm component is divided into a base-side part (141) and a tip-side part (130) at an axially intermediate position, the second arm component has rotation means for rotating the tip side part (col. 6, lines 39-46) around its arm axis relative to the base part.

Regarding claim 5, the second arm component includes a movable member (138) and a moving device (26, 64) for moving the movable member in the arm axis direction (in slot 136) of the second arm component (see col. 6, lines 59-65).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUSTIN KRAUSE whose telephone number is (571)272-3012. The examiner can normally be reached on Monday - Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on 571-272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Justin Krause/
Examiner, Art Unit 3656
/Thomas R. Hannon/
Primary Examiner, Art Unit 3656